imagery. One method uses only one channel data to interpolate the ice concentration between 0 and 100% corresponding to the open water and the snow cover, respectively. This method yields an uncertainty owing to the variation of albedo by the surface condition change. Another method uses two-channel data to derive not only the ice concentration but also the ice surface condition and can eliminate uncertainties involved in the first method. The ice surface condition is expressed by "snow coverage". Air photographs are compared with the satellite data. They are helpful to discuss the surface condition of sea ice. Time variations of the concentration and surface condition of summer sea ice are discussed.

For detail, the reader may refer to the full paper of this work (YAMANOUCHI *et al.*: Nankyoku Shiryô (Antarct. Rec.), **30**, 89, 1986).

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STATISTIC DISTRIBUTIONS OF MICROWAVE BRIGHTNESS TEMPERATURE OF SEA ICE IN THE MOS-1 AIRBORNE VERIFICATION EXPERIMENT (ABSTRACT)

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Microwave brightness temperatures of sea ice were observed off the coast of Monbetsu on January 25 in 1985 by the airborne 23- and 31-GHz microwave radiometers in the MOS-1 airborne verification experiment. Sea ice map and surface temperature data of sea ice measured by a helicopterborne radiative thermometer were supplied by the Maritime Safety Agency and were used for the ground truth data.

Histograms were produced to show statistic distributions of microwave brightness temperatures at 23 and 31 GHz. Remarkable differences were not found between histograms at 23 and at 31 GHz. Cumulative distribution tables show that microwave brightness temperatures of more than 50% took values higher than 232 and 234 K at 23 and at 31 GHz, respectively. If the average surface temperature value of sea ice, 258 K, is used, microwave emissivity values become larger than 0.9 at 23 and 31 GHz for sea ice of more than 50%. Emissivity value suggests that the greater part of observed sea ice was composed of young ice and thin first year ice. This result is consistent with the ground truth data.

It was verified in this experiment that microwave radiometers of 23 and 31 GHz are useful for observing sea ice.

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PROCESSES OF HIGH-SEA ICE PRODUCTION (II): CONVECTION WITH FRAZIL ICE PRODUCTION (ABSTRACT)

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A semi-permanent area of open water has been frequently observed within the winter sea ice